# INSTITUTE AND FACULTY OF ACTUARIES

# EXAMINERS' REPORT

April 2014 examinations

## Subject ST9 – Enterprise Risk Management

**Introduction**

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

D C Bowie
Chairman of the Board of Examiners

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**General comments on Subject ST9**

The ST9 exam generally requires bullet point form or short form essay style answers that apply general principles to directly address specific circumstances. The answers given below are just one possible set of acceptable answers. Candidates are awarded marks for all reasonable answers including different but still reasonable numerical solutions. Marks are awarded for working in the case of numerical answers.

Candidates' answers are made up of a series of points. For example, a point can be stating a valid type of risk, describing the type of risk or (part of) a calculation. Some points are more fundamental to the correct answer but, in the main, candidates earn one-half mark per correct point up to the limit of marks available for the question.

**Comments on the April 2014 paper**

At first glance the paper appears to be dominated by a single 78 mark question. In fact the question is made up of several different and distinct sub-questions based on a single situation or case study. The examiners felt that it would be quicker and easier for candidates to apply their knowledge to a single situation rather than the alternative of using a number of different situations to ask the same questions. Regardless of whether or not a paper is dominated by a single case study, the overall paper will always contain the targeted balance of bookwork and application and the range of content needed to reasonably cover the syllabus.

As is common practice, some of the questions were loosely based on actual events, for example, question 1 which was focussed on the positives and negatives of a single key individual running a company. Question 3 was based on recent Basel III developments. For these reasons, candidates are encouraged to read the financial press and to consider how current news items can be applied to the issues and concepts contained in the core reading.

Well-prepared candidates scored acceptably well across the whole paper. The comments that follow the questions concentrate on areas where candidates could have improved their performance.

**1** (i) The risk that the loss of the founder will pose to the ability of that organisation to:

- continue to achieve its strategic objectives
- maintain its profitability
- keep its customers
- avoid an adverse share price impact
- and meet its obligations to customers.

This includes the loss of the founder's intellectual capital and potential contagion risk from the loss of other members of the management team who might no longer remain loyal to the company.

(ii) Key man risk is not a risk that can be removed by transferring it to an insurer or another party. It has to be retained and the emphasis should therefore be on taking active steps towards reducing the risk exposure.

The main strategy should be a succession plan, which will set out the actions the firm is taking in this regard.

For example, it should cover:

- Early identification of the intended successor(s) and "job-sharing" towards the retirement date.
- Capturing the founder's knowledge and ensuring that all processes in which they are involved are well documented.
- Training programs for other staff members.
- Communicating externally to clients and other stakeholders including moving other staff members into key relationship roles.
- Communicating internally to staff on the issue of succession in order to help set career paths.
- Recruitment activities, if necessary.
- An employment contract with the key man with a notice period and other conditions designed to give the company time to replace the key man.
- For example, keep him on in a non-executive role

There may be "golden handcuff" bonus arrangements with other important staff members, to avoid a contagion effect.

*Part (i) – This part was handled well by most. Virtually all of the candidates made at least some of the above points.*

*Part (ii) – This part was handled well by most. As ever, additional marks were given for other valid answers including the introduction of a non-compete clause for the key man and other important staff members and also the possibility of purchasing key man insurance.*

**2** (i) Cheaper – may have lower overhead costs.

Access to wholesale insurance / reinsurance markets.

Increased purchasing power – buying in large volume rather than by company.

Possible tax advantages.

(ii) Insurance risks will be either property damage or liability:

Property damage: Large number of very small claims. Because of large number, the aggregate claims will be stable → low risk and thus can be retained.

Liability risk: Lower number of claims but can be very large. Therefore likely to be transferred to reinsurers via captive.

(iii) For:

- Ensures captive insurers are held to the same standards as open market insurers in terms of prudent management and governance.
- No opportunity for regulatory arbitrage.
- May be simpler for the regulator

Against:

- Does not recognise that captives generally take lower overall levels of risk than open market insurers.
- Can add to the overhead costs of running a captive insurer.

*Part (i) – This part was handled well by most. As ever, additional marks were given for other valid answers including:*

- *Cheaper – can retain risk and therefore avoid transferring profit to external insurance providers. Similarly it avoids cash swapping which means paying a premium with the almost certainty of having a large portion of it returned as claims.*

- *May give the group greater control e.g. over which risks (and how much) are retained.*

*Part (ii) – This part was handled poorly by most. Many candidates did not appear to understand what insurance risk is and so they either didn't answer this part or answered a different part. Insurance risk refers to the risks that GC Insurance are insuring.*

*Part (iii) – This part was handled well by most. Many candidates scored near full marks.*

**3** (i) Credit risk – A bank's counterparty is unwilling or unable to make payments required under an agreement.

Interest rate risk – First, the risk of changes to the asset-liability value due to changes in interest rates i.e. the change in the net present value of assets less liabilities. Second, optionality risks which arise from products that have an option to take certain actions and are more likely to do so in a rising or falling interest rate environment, e.g. early redeemable loan assets.

Currency risk – A bank's net exposure to changes in foreign exchange rates. For example the bank might borrow in US dollars and report in US dollars, and may lend some monies in Euros without hedging the exposure.

Liquidity risk – The ease with which assets can be converted to cash. Liquidity risk generally increases as the average term of assets less the average term of deposits increases (this is called the liquidity gap). Liquidity is highly subject to systemic (contagion) risk as the willingness of banks to lend to each other in times of financial crisis is materially restricted.

(ii) Bank B's LDR is 90% meaning that the bank is fully funded by customers' deposits. Customers' deposits are relatively long term in behaviour even though they may be short term contractually. Bank B is conservatively funded. With an LDR of 200%, Bank A is reliant on wholesale funding. Short term wholesale funding disappeared in the 2007-08 financial crisis causing banks reliant on wholesale funding to collapse, so Bank A is significantly more exposed to the risk of a future such event.

Bank A could withstand 30 days of stressed cash outflows by selling assets. Bank B could not. Bank B is carrying higher liquidity risk and is more exposed to certain types of extreme financial conditions.

Bank A is operating on a relatively mismatched basis as its NSFR is well below 100%, suggesting that its long term assets are not fully covered by its long term stable funding. Bank A needs to continue to rely on short term wholesale bank funding including inter-bank lending to support its assets or sell its assets. As such loans are often fixed rate, Bank A is likely to be relatively more exposed to interest rate risk, liquidity risk and extreme financial conditions. With a NSFR of 110%, Bank B's long term assets are covered by its stable funding base.

(iii) The development of a comprehensive funding plan.

A review of current liabilities ordered by cost to the bank.

Determination of the cost of every type of funding and its characteristics over the past 5 years.

Determination of the expected cost and range of costs of every type of funding and its characteristics over the next 5 years.

Determination of the optimal funding mix based on stable/non-stable split, regulatory impact and value for money.

A target date to reach the optimal funding mix and a deposits plan to work to in reshaping the balance sheet.

*Part (i) – This part was handled well by most. Whilst the above answer gives the three main risk types, additional marks were given for other valid answers including regulatory, operational and model risk.*

*Part (ii) – This part was handled well by most. Many candidates made at least one-half of the key points made above.*

*Part (iii) – Marks were given for a wide range of reasonable points. Many candidates scored poorly because they did not make a sufficient number of different reasonable points.*

**4** (i) There appears to be some significant agency risks. The shareholders and the lenders risk Abe behaving in a way that is detrimental to them. Abe appears to be a dominant CEO. He is running the company as he chooses with little oversight. He is chairman, CEO and president. There are no independent directors on the group board.

Operating risks associated with lack of controls and no apparent ERM. Corporate governance is likely to be very weak, at least at the group level. It may exist in the subsidiaries. Subsidiaries are operating independently.

Key man risk - Abe is approximately 60 years old. There does not appear to be an obvious successor, and his retirement is likely to lead to significant adverse implications for the ongoing viability and profitability of the business.

Operating risks associated with likely insufficient management information. The group operates on several continents and with many different products and businesses. The group function appears to be grossly insufficient.

Leverage – Too much leverage exposes the company to bankruptcy in a downturn. The long term bank debt is $2bn and short term bank debt is $3bn. This totals $1bn more than the booked value of property and plant and machinery. The booked value could exceed the realisable value. It appears that the banks are lending without full security or are relying on the security of intangible assets (brands and secret ingredient).

Pre-tax profit totals $700m. The interest charge on $5bn could be $250m or more than one-third of profits. Shareholders' funds total $2.4bn meaning that the debt to equity ratio is 5/2.4 or more than 2. The company can afford its current debt levels although they appear high. But the company is at risk of financial difficulty in the near term if it is unable to replace the short term debt. A new lender may be uncomfortable lending without security on tangible assets.

Interest rate risk – The company also risks financial difficulty if it can only replace its short term debt with arrangements at much higher interest rates. If any of the debt arrangements are on floating rates, it is similarly exposed to the risk of increased interest rates.

Liquidity – The company has $100m of cash. This is about 4 months' of employee costs at the subsidiaries. Ingredients in the subsidiaries total $600m. It appears that the company has virtually no working capital. This puts it in danger of needing to borrow more short term funds or failing to pay its creditors.

Credit risk – Trade debtors total $400m. The risk of default loss is not small but should be manageable for a company with annual profits of the order of $450m after interest payments.

Currency risk – There is a risk of adverse movements in exchange rates and the negative impacts on repatriated profits, given that the company operates across a wide range of continents.

Reputational risk – This is a major risk for the company. It is a brands business. The brands are valued at $3bn on the balance sheet and could be worth much more (or less) than this.

Given that the brand prides itself on fair trade and care for the environment, the brand could be damaged by media exposure of unethical activities by one of its subsidiaries or a member of staff, even if not directly related to the company's own activities.

Operating risk – Exposed to fraud, bribery and corruption due to apparently poor governance. The Brands division paid $25m in expenses without receipts. It is possible that one or more employees is stealing from the company or bribing people with cash. An employee could leak the secret recipe.

Water quality – The drink division's main ingredient is water. Water quality is the single biggest risk of the company. Brands division's annual revenue total $900m. Much of this will be from the drink distribution companies whether owned or franchised. The water quality risk is no doubt spread across several different factories and several different continents but a failure in water quality would shut down a plant and likely result in large losses.

Reputational risks – Product contamination. A failure in water quality, if not spotted, might result in products reaching the market which are contaminated. This would no doubt result in product recall and damage to brand value. Product contamination can occur for many reasons and may even be deliberate sabotage. The company needs to have quality control processes in place.

Legal risks – If there is any product contamination or other failure that is not caught in time, the company is exposed to the risk of litigation and the need to pay substantial compensation.

Weather risks – The drink division is likely to perform better in hotter weather. The other divisions may also have some exposure to weather.

Business risks – Market demand is the main business risk carried by the company. Competition is likely to be relatively strong in all of the company's three trading subsidiaries and the actions of competitors (or a new competitor) into the market contribute to such risk.

There is also the risk of the brand going out of fashion with consumers. However, the company will be well used to this and will have well developed practices including marketing, promotions, product innovation and acquiring competitors.

Inflation risk – there is a risk of higher than expected input price inflation (e.g. ingredients, staff costs) if this cannot be matched by inflation of retail prices without damaging demand.

*This part was very well handled by many. Marks were given for a wide range of reasonable points. Additional points included:*

- *Physical risk, e.g. property fires, also leading to business interruption.*
- *Property value (market) risk, given that property comprises a high proportion of the balance sheet assets.*
- *Regulatory/compliance risk, e.g. the secretive nature of the company and lack of accounting information might be tolerated now, but this could change.*
- *The brand value is a big part of both the assets and the annual profit as the bottlers pay to bottle and sell the popular brand. Risk of overreliance on brand is like a reputational risk.*

(ii) Water is the largest ingredient for the drink distribution companies.

The quality of the water is of paramount importance to the drink's taste and health.

Floods can contaminate a water supply.

Long range forecasts are useful for predicting disturbances to the water supply i.e. flood or drought.

Long range forecasts may also help predict periods of unusually hot or cold weather which can materially impact the amount of soft drinks consumed and which allows them to plan mitigation strategies.

Floods can also disrupt operations and distribution e.g. restricts customer access.

Floods can damage property holdings.

Floods could at least temporarily increase the cost of other ingredients e.g. price and availability of ingredients.

*This part was reasonably well answered by many although only a minority of candidates mentioned that water is the largest ingredient for drinks either directly at the distribution plant or indirectly at the agricultural stage.*

(iii) Agency risk – The team is incentivised to build a large book of weather derivatives without fear of loss (due to the zero floor on the bonus).

Operational risk – the financial exposure to loss is not being reported to the manager or to ACC.

The team only reports monthly in arrears to the manager.

It does not appear to have any limits as to how much it can buy and sell.

The premiums and settlement amounts are reported to the manager. There is no information regarding size of exposures, type and geographic concentration of exposures, probability of profit or loss from existing contracts.

ACC is a more natural buyer of weather derivatives than seller. The team is being incentivised to sell them and not buy them because the bonus is based on the net premium. It is easy to generate a bonus by selling a derivative. The team then simply hopes that the event doesn't occur triggering a loss. The team can receive a profit on premiums received before the risk has expired.

The manager only reports the net profit quarterly in arrears to the CFO, which is insufficient information and too late.

*The answer is focussed on the risks associated with the operations. Several candidates ignored this part and included risks associated with trading derivatives.*

(iv) Disband the team and trade through a bank.

Stop or limit speculative trades.

Ban selling weather derivatives.

Find other (non-financial) ways to motivate the team.

Receive greatly improved management information re the size of potential losses (i.e. exposure and concentrations).

More frequent reporting and monitoring.

Change incentive structure to incentivise risk-appropriate decisions.

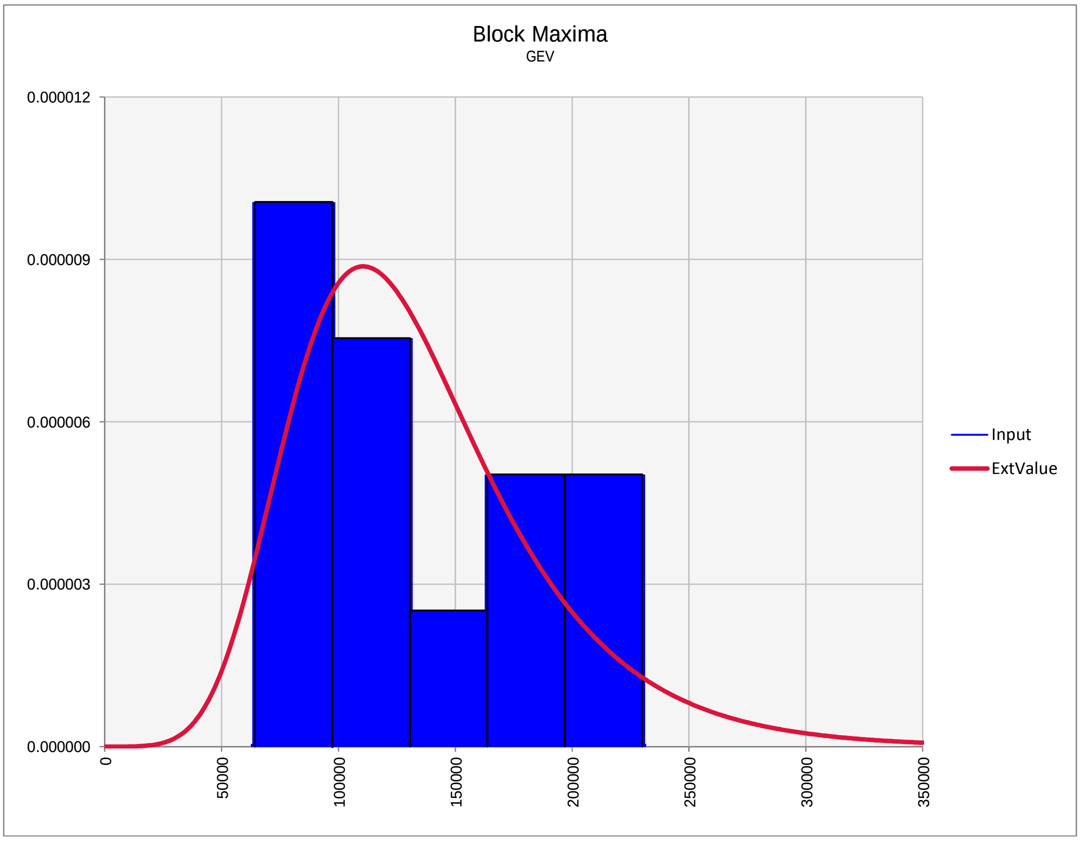
Include multi-year deals and deals that haven't expired at bonus time.

*This part was well handled by many. Most candidates made points which are included in the answer. As ever, additional marks were given for other reasonable points.*

(v) **Block Maxima (Return Level) Approach**

Separate the time series data into even sized blocks. Select the highest observation in each block and fit a generalised extreme value distribution function to the data using a maximum likelihood estimator.

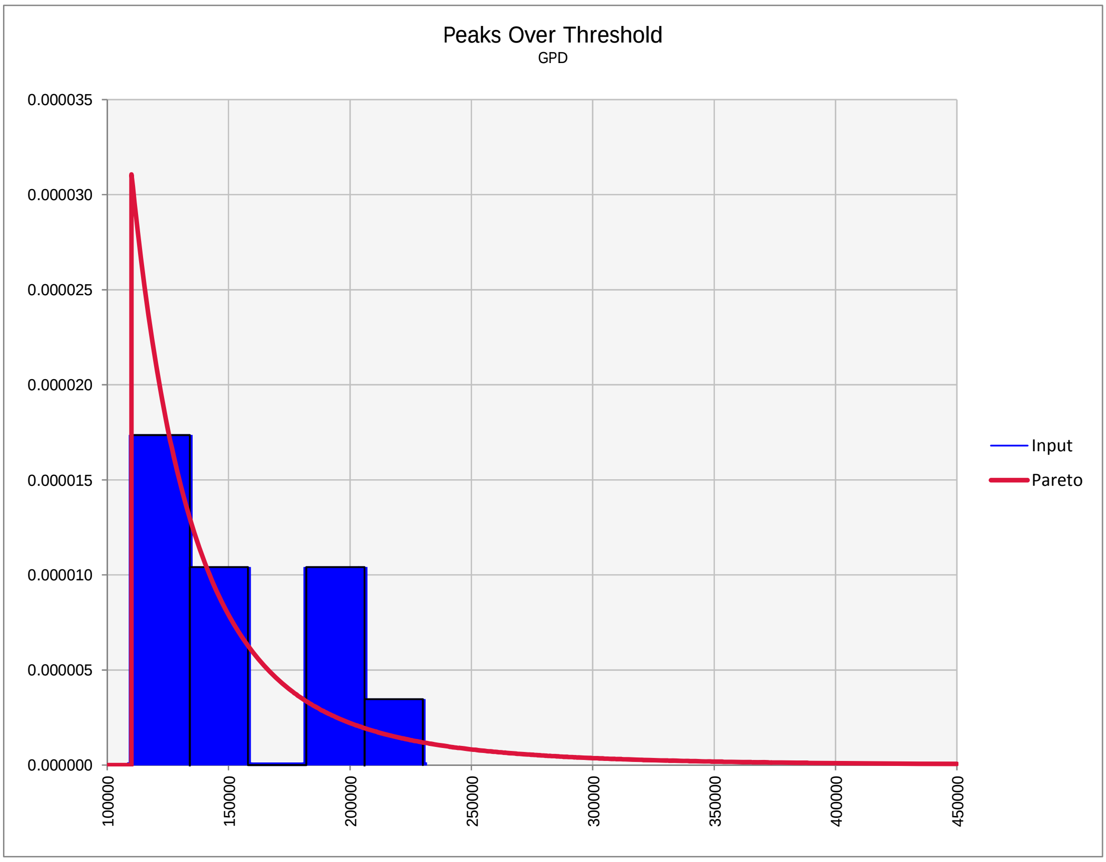
Plot of flood data under this approach:



**Peaks Over Threshold Approach**

Choose a threshold level over which the observed data are considered to be extreme. Fit a generalised Pareto distribution to all observations minus the threshold (for those observations exceeding the threshold) using a maximum likelihood estimator.

Plot of flood data under this approach:




The block size choice is crucial. If it's too big then too much data is discarded. If it's too small then too much non-extreme data will be fitted and the goodness of fit will be unduly weighted towards non-extreme data. In this case the curve will likely under fit the tail. That is the extreme values will be underestimated.

The GPD will typically keep more data and so is often preferred. The choice of the threshold is important for the same reasons that the choice of the block size is important with the block maxima approach.

Both methods assume that the underlying data are independent and identically distributed. Seasonality, trends and serial correlation in the data will violate this assumption.

Extreme Value Theory's asymptotic law states that for long block lengths the block maxima approach will result in a generalised extreme value function and that for high thresholds the peaks over threshold approach will result in a generalised Pareto distribution. At this point the shape parameters of the fitted GEV and fitted GPD will be effectively the same and their means and variances will be related.

*This part was very poorly answered overall. The vast majority of candidates were not prepared to answer this part. A small minority of candidates handled this part very well. Marks were given for answers based on different block sizes and thresholds.*

(vi) Flood levels are different from precipitation data and precipitation data is likely to be available.

Flooding can occur from rainfall occurring in a different area, e.g. river systems with different catchment areas and snow melt versus rain.

If they are trying to protect against flooding and only precipitation derivatives are available then the results are likely to be helpful but the precipitation data should also be collected and analysed.

The flooding data would provide the information regarding the appropriate trigger points for the precipitation weather derivative.

*This part was reasonably well handled by many. Marks were given for a wide range of reasonable points. Additional points included that flooding and precipitation could well be correlated and that flood defences would need to be taken into account. This part could be answered without needing to attempt part (v) above. Some candidates seemed to not attempt parts (vi) and (vii) because they had not attempted (v). This approach might have lost them marks.*

(vii) Yes, if 80 degrees Fahrenheit is relatively extreme for the area and if the assumption that the observed temperature data are independent and identically distributed is valid. No, otherwise.

*The comments for part (vi) apply equally well to this part.*

(viii) <u>Risk of failing to meet ACC's values</u>

All three ideas can be managed within ACC's core values. The main concern would be with the developing country venture where the government may be more likely to be less concerned with the environment as it pursues economic growth and the suppliers may be more likely to mistreat their own suppliers and the environment in the pursuit of profit.

<u>Reputational risk of negatively impacting ACC's reputation and its current brands</u>

ACC is likely to be trying to make its own products healthier whilst not sacrificing taste and enjoyment. There is a risk that if it buys a health food company then people would see that as an admission by ACC that its own products were not healthy. In other words some brand value would be destroyed.

Alcohol products carry different brand values and reputational risks. There is a risk that people would not want their family restaurant, for example, to be associated with an alcoholic drink producing company.

It is possible that the developing country venture could enhance the group's other brands and reputation if it was seen as helping a country to grow and develop and not simply profiteering. However, if the new government also proves to be corrupt then there could be issues arising from what could appear to be a close relationship.

<u>The impact on ACC's group leverage and cash flow</u>

Projects often require funding over time with a certain amount of flexibility to change the funding requirement as the project unfolds. In this sense the developing country venture is likely to have the smallest impact on the group's leverage and outward cash flows.

ACC would need to fund itself to purchase the health food company unless it bought it with its own shares. Presumably the health food company would produce a steady stream of positive cash flows to the group.

The brewery company venture would likely require some up front outlay and then major alterations to one of the group's existing distribution companies to cope with brewing and distributing beer. The funding need will depend on the proposed scale of the venture but the net cash flows are likely to be negative for some time.

There is the related risk that the actual costs of establishing any of these projects turn out to be materially in excess of what was expected.

<u>Strategic risk of failing to meet the plans and objectives of the business venture and ultimately failing to produce the budgeted returns on investment</u>

This risk will be increased or reduced depending on:

1. How closely the venture fits the group's existing core competencies. There is overlap in all three ventures. The group's snack foods and drinks divisions would have a lot of overlap with the health food company. The group's drinks division would understand how to package and distribute bottled and canned beer. The group would be introducing its own products to the developing country. The greater the overlap with existing competencies, the lower the inherent operational risks.

2. Understanding of the country and marketplace including people's tastes, culture, values. The group will understand the health food company's market. It will have some understanding of the brewery's market due to the geographical overlap. It will have virtually no knowledge of the developing country.

3. How much of the venture is a project and how much of the venture is an established going concern. The developing country project is the most risky in this respect; the health food manufacturer the least.

4. Agency risk associated with new employees who will have different cultures and values. This risk will depend on the extent to which existing ACC staff are integrated into the new projects. The greatest agency risk might come with the health foods manufacturer, as it is a large established company and the management might resent the takeover. There is more scope with the developing country project to instil ACC values at outset, but these may not necessarily be compatible with the local culture.

5. Political risk, being the risk of future government interaction. The developing country venture includes substantial political risk. The government could change in the near term and do many things including punitive tax, nationalise the company's assets or prevent monies being repatriated offshore. Political risk in the other two ventures is likely to be much reduced, but it still exists. For example, governments regularly seek to try to reduce the amount of alcohol being drunk.

6. Regulatory and tax changes can be a new point and a new mark

7. Business risks being mainly competition, supply, demand, and input price inflation. These risks will be more manageable, the greater the knowledge and understanding of the market. The developing country might have greater volatility and more unpredictability, particularly given the government's overall plans to kick-start the economy.

8. There would be currency risk involved in the developing country project (in respect of repatriation of profits), no such risk for the health food market (or limited, depending on its markets), and possible such risk for the brewing project, depending on where the micro-breweries are situated and the intended distribution markets.

*This part was reasonably well handled by many. Marks were given for a wide range of reasonable points. Additional points included those related to operational risks and those related to the flexibility of entry and exit. For example, the first option is a start up project meaning that there is a lot of control over the timing and cost of the future growth. The second option can be re-sold or re-listed on the stock exchange. The third option is likely to be much more difficult to sell or downsize.*

(ix) Only the developing country venture should be pursued. ACC already operates in several continents. It would be easy and very inexpensive to start up operations in the country by importing goods and commencing a small number of kiosks and restaurants on a trial basis.

The potential cost savings from combining the health food operation into ACC are not likely to offset the potential brand damage to the existing products.

Beer is a relatively saturated market. There is considerable risk that the launch of new mass market beers would fail. There is also the potential for the beer brand to negatively impact the value of the other brands.

*This part was reasonably well handled by many. Marks were given for answers pursuing other business options provided that the arguments were reasonable.*

(x) The purpose of ERM is to identify, quantify and holistically manage all of the individual risks of the enterprise in order to maintain an overall level and set of risks that have been stated to be acceptable to the enterprise in pursuit of its other objectives. Managing the risks will include monitoring and reporting on the risks and, as appropriate, mitigating, transferring and accepting the diversified pool of remaining risks.

The ERM framework must be fit for this purpose. Further, it must be sized to fit the nature, size and complexity of the enterprise.

ERM must be embedded into the enterprise in order for it to monitor risks in a timely fashion and in order for it to identify new risks as they arise.

In order to be embedded, to save time and costs and to not duplicate work, the framework should start with existing departments and activities in the enterprise. For the three trading subsidiaries these will include:

1. Quality control
2. Purchasing managers
3. Health and safety
4. Human resources
5. Food standards laws and agencies
6. Management information

The subsidiaries operate autonomously. This is a business decision and as such each division should employ a part time or full time risk manager depending on workload.

The risk manager will then be responsible for working with all relevant areas to build and maintain a risk register and supporting management information.

The frequency of the management information and the regular risk register review will depend on the nature of the underlying risks.

For ACC monthly management information and a 6 monthly review of the risk register will likely suffice.

This said, the framework needs to include the mechanism for ad hoc risk reporting to the risk manager.

The risk manager will then use the management information to produce a set of risk measures and report these monthly to each subsidiary's risk management committee (RMC).

The risk management committee is likely to include the chief executive officer, chief operating officer, chief financial officer and chief investment officer and legal counsel if any.

The committee will also include the (newly appointed) group chief risk officer.

Following the monthly meetings, the management may make decisions designed to mitigate, transfer or differently manage the various risks.

The group chief risk officer, working with the various risk managers, will then produce a set of group reports taking into account the various RMC packs and management decisions.

These packs will be presented to the group risk management committee and they will be discussed with the board when it meets.

One of the additional considerations at group level is to ensure that the group is operating within its stated risk appetite, profiles and tolerances.
The framework does not only collect and process information in one direction. The framework must be designed to report suggested business changes to the appropriate persons and to then ensure that they are acted upon.

For example, the subsidiary risk management committee might be concerned that the held stock position is relatively high and it could cause a hazard. The chief operating officer being present at the committee will agree to reduce the stock position and the committee will then monitor the impact of the action in future meetings.

Another example would be random hygiene checks at the restaurants.

The framework will include the processes for setting operational limits and rules that seek to ensure that risk levels are not breached.

At regular intervals the various chief executive officers and chief operating officers would discuss the risk register, the risk appetite, risk profiles and risk tolerances to design operational limits, rules and systems to work within the appetite, profiles and tolerances.

Turning to corporate governance:

The governance structure specifies the distribution of rights and responsibilities among different participants in the corporation (such as the board of directors, managers, shareholders, creditors, auditors, regulators, and other stakeholders) and specifies the rules and procedures for making decisions in corporate affairs.

Governance should be driven from the top of ACC downwards. It should prescribe an appropriate culture and put in place the mechanisms to deliver it throughout the company.

Abe should be either the chairman or the CEO and not both.

The board composition should change. The subsidiary CEOs might leave the main board and be replaced with non-executive directors with appropriate experience and expertise.

Ideally the board could have a majority of independent directors.

The chief risk officer should join the board.

The board should establish committees including risk management, remuneration and audit.

The committees' roles and responsibilities will be established in writing and the committees will be chaired by an independent board member.

There should be no need for a formal corporate governance committee or compliance function at ACC. Compliance will largely refer to various health and safety, food standards and consumer affairs regulations. These can most likely be handled by a combination of human resources and the operations managers through the chief operating officer. Of course, they will also be monitored through the RMC.

Group management should produce a paper articulating ACC's core values, its culture and its ethics. The paper should be approved by the board and then issued to all employees to explain how ACC requires its employees to behave.

A good culture will be one promoting openness and transparency.

"Risk champions" may be identified in each business area or subsidiary or operational centre.

ACC should start to provide far more detailed reporting to its various stakeholders. It should strive to be as transparent as possible in a competitive environment to demonstrate to all that it is well run and behaving as an upstanding corporate citizen.

Remuneration and personal development processes should be established that encourage and reward appropriate risk-aware behaviours.

Internal audit functions may be established or strengthened.

*This part was reasonably well handled by many candidates. Even though this part was relatively generic the answer needs to relate back to the particular case study. The vast majority of candidates made many valid points. Some candidates failed to score more marks because they were unable to make their points relevant to the case study.*

(xi) The credit rating agency rating the bond and the exchange are likely to make suggestions that they feel would help to strengthen the ERM. This may involve changes to the framework. Common changes suggested would include:

- The timeliness of the reporting. They may feel that some information should be available on the company's systems weekly instead of monthly.

- The detail of the information being reported through to the various risk management committees. They generally feel that more information is better than less information.

- The centralisation of the ERM. They may feel that the proposed practical structure doesn't have sufficient internal audit style checks and verifications of reported data.

Whilst not a change to the framework, the group risk manager will likely change some of the management information to monitor the credit rating of the bond and the potential for a rating change. A decline in rating will make any replacement issue more expensive.

The credit rating agencies' ERM requirements will likely increase as the rating increases.

*This part was reasonably well handled by many candidates. Part (x) stated that the answer had to apply to ACC specifically. Even though part (xi) also applies to ACC specifically the answer is likely to apply equally well to many other companies issuing a rated bond for the first time to be traded on the stock exchange. This is because the drivers of change will be the credit rating agency and the stock market listing authority. For this reason the above answer is quite generic to a particular type of situation and not just specific to ACC.*

## END OF EXAMINERS' REPORT